

## REMARKS/ARGUMENT

Claims 1-9 stand allowed.

The Examiner seems to be confused regarding Claims 11-14. Claims 11-14 depend (directly or indirectly) from Claim 1 – NOT from Claim 10. Since Claim 1 is already allowed, Claims 11-14 are therefore similarly allowable.

1) Claim 10 stands rejected under 35 U.S.C. 102(b) as being anticipated by McCune, Jr. et al. (5,5,952,895). Applicants respectfully traverse this rejection, as set forth below.

In order that the rejection of Claim 10 be sustainable, it is fundamental that “each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference.” Verdegall Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, “The identical invention must be shown in as complete detail as is contained in the ... claim”.

Furthermore, “all words in a claim must be considered in judging the patentability of that claim against the prior art.” In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Independent Claim 10, as amended, requires and positively recites, a digital modulator for use in a radio frequency transmitter, comprising: “a phase-lock-loop (PLL) loop producing as an output signal a modulated RF signal”, “a phase

demodulator having an input port for receiving unmodified the modulated RF signal and having an output port for providing a phase information signal” and “a comparator having a first input port for receiving the phase information signal and having an output port for outputting an error signal.”

In contrast, McCune clearly shows that the signal output by VCO 405 is modulated (i.e., modified) with synthesizer SYNTH and the output is then passed through low pass filter LPF prior to the modulated and filtered signal being input to phase demodulator 419 (col. 3, lines 11-23). As such, McCune fails to teach or suggest, “a phase demodulator having an input port for receiving unmodified the modulated RF signal and having an output port for providing a phase information signal”, as required by Claim 10. The 35 U.S.C. 102(b) rejection is improper and must be withdrawn.

2) Claims 15 and 18 stand rejected under 35 U.S.C. 102(b) as being anticipated by Dent (5,834,987). Applicants respectfully traverse this rejection, as set forth below.

Independent Claim 15, as amended, requires and positively recites, a radio frequency (RF) modulator comprising: “a phase-lock-loop (PLL) loop including a loop filter and receiving as an input signal a modulation signal and producing as an output signal a modulated RF signal”, “circuitry for receiving unmodified the modulated RF signal and outputting an error signal” and “circuitry responsive to said error signal for controlling the amplitude of the modulation signal”.

Independent Claim 18, as amended, requires and positively recites, a method of producing phase shifts in a modulated RF signal, comprising the steps of: “producing a modulated RF signal”, “**receiving unmodified the modulated RF signal** and outputting an error signal” and “controlling the amplitude of a modulation signal in response to the error signal”.

In contrast, Dent discloses in FIG. 3 that the modulated RF signal is run through variable divider 106 and modulator 107. As such, Dent fails to teach or suggest, “circuitry for receiving unmodified the modulated RF signal and outputting an error signal” and “circuitry responsive to said error signal for controlling the amplitude of the modulation signal”, as required by Claim 15 or “**receiving unmodified the modulated RF signal** and outputting an error signal” and “controlling the amplitude of a modulation signal in response to the error signal”, as required by Claim 18. Accordingly, the 35 U.S.C. 102(b) rejection over Dent is overcome.

3) Claims 15 and 18 stand rejected under 35 U.S.C. 102(b) as being anticipated by Beard (6,731,713). Applicants respectfully traverse this rejection, as set forth below.

Independent Claim 15, as amended, requires and positively recites, a radio frequency (RF) modulator comprising: “a phase-lock-loop (PLL) loop including a loop filter and receiving as an input signal a modulation signal and producing as an output signal a modulated RF signal”, “circuitry for receiving unmodified the modulated RF signal and outputting an error signal” and “circuitry responsive to said error signal for controlling the amplitude of the modulation signal”.

Independent Claim 18, as amended, requires and positively recites, a method of producing phase shifts in a modulated RF signal, comprising the steps of: “producing a modulated RF signal”, “**receiving unmodified the modulated RF signal** and outputting an error signal” and “controlling the amplitude of a modulation signal in response to the error signal”.

In contrast, Beard discloses in FIG. 5 that the modulated RF signal is run through divide by N 128 prior to being passed on to phase detect 110. As such, Beard fails to teach or suggest, “circuitry for **receiving unmodified the modulated RF signal** and outputting an error signal” and “circuitry responsive to said error signal for controlling the amplitude of the modulation signal”, as required by Claim 15 or “**receiving unmodified the modulated RF signal** and outputting an error signal” and “controlling the amplitude of a modulation signal in response to the error signal”, as required by Claim 18. Accordingly, the 35 U.S.C. 102(b) rejection over Beard is overcome.

4) Claims 15 and 18 stand rejected under 35 U.S.C. 102(e) as being anticipated by Mattisson et al. (6,734,749). Applicants respectfully traverse this rejection, as set forth below.

Independent Claim 15, as amended, requires and positively recites, a radio frequency (RF) modulator comprising: “a phase-lock-loop (PLL) loop including a loop filter and receiving as an input signal a modulation signal and producing as an output signal a modulated RF signal”, “circuitry for **receiving unmodified the modulated RF signal** and outputting an error signal” and “circuitry responsive to said error signal for controlling the amplitude of the modulation signal”.

Independent Claim 18, as amended, requires and positively recites, a method of producing phase shifts in a modulated RF signal, comprising the steps of: “producing a modulated RF signal”, “**receiving unmodified the modulated RF signal** and outputting an error signal” and “controlling the amplitude of a modulation signal in response to the error signal”.

In contrast, Mattisson discloses in FIGs. 2 & 3 that the modulated RF signal (fo) is run through frequency dividers 22 and 20 prior to being sent to comparator 14. As such, Mattisson fails to teach or suggest, “circuitry for **receiving unmodified the modulated RF signal** and outputting an error signal” and “circuitry responsive to said error signal for controlling the amplitude of the modulation signal”, as required by Claim 15 or “**receiving unmodified the modulated RF signal** and outputting an error signal” and “controlling the amplitude of a modulation signal in response to the error signal”, as required by Claim 18. Accordingly, the 35 U.S.C. 102(b) rejection over Mattison is overcome.

Claims 16 & 17 depend (directly or indirectly) from Claim 15 and are therefore similarly allowable. Claims 19 & 20 depend (directly or indirectly) from Claim 18 and are therefore similarly allowable.

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Claims 1-9 stand allowed. Claims 11-14 should also be allowed since they depend directly, or indirectly, from Claim 1. Claims 10 and 15-20 stand allowable over the references of record. Applicants respectfully request allowance of the application as the earliest possible date.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ronald O. Neerings".

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